

Beatrice Black Bear

The World's Most
Music-loving Bear

By John Grandits

Illustrated by Paige Billin-Frye



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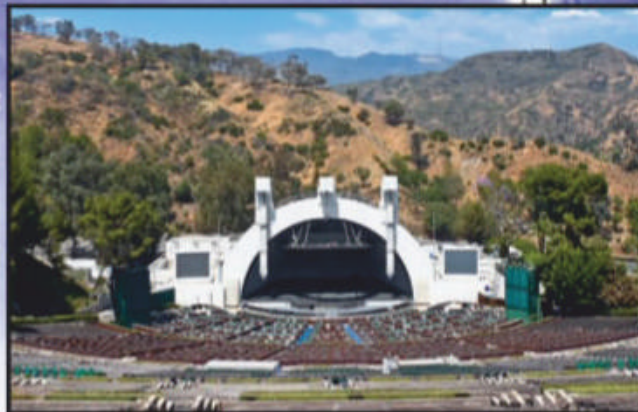
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When you feel like hearing beautiful music, it's fun to go to a beautiful place to hear it.

The Sydney Opera House in Australia sits right on the edge of the water. It reminds me of giant sailboats. Inside, you can sit and listen to a fabulous orchestra.



The Hollywood Bowl is in California. The audience sits on chairs that gradually go up the side of a hill. On a beautiful night you can enjoy the music and gaze up at the stars.



But if it starts to rain, get ready to run for shelter.



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**Let's make
music**



How Many People Do You Need For a Band?

Learning to play a musical instrument well takes practice. But making music can be so much fun that some people want to play as many instruments as they can—all at once!

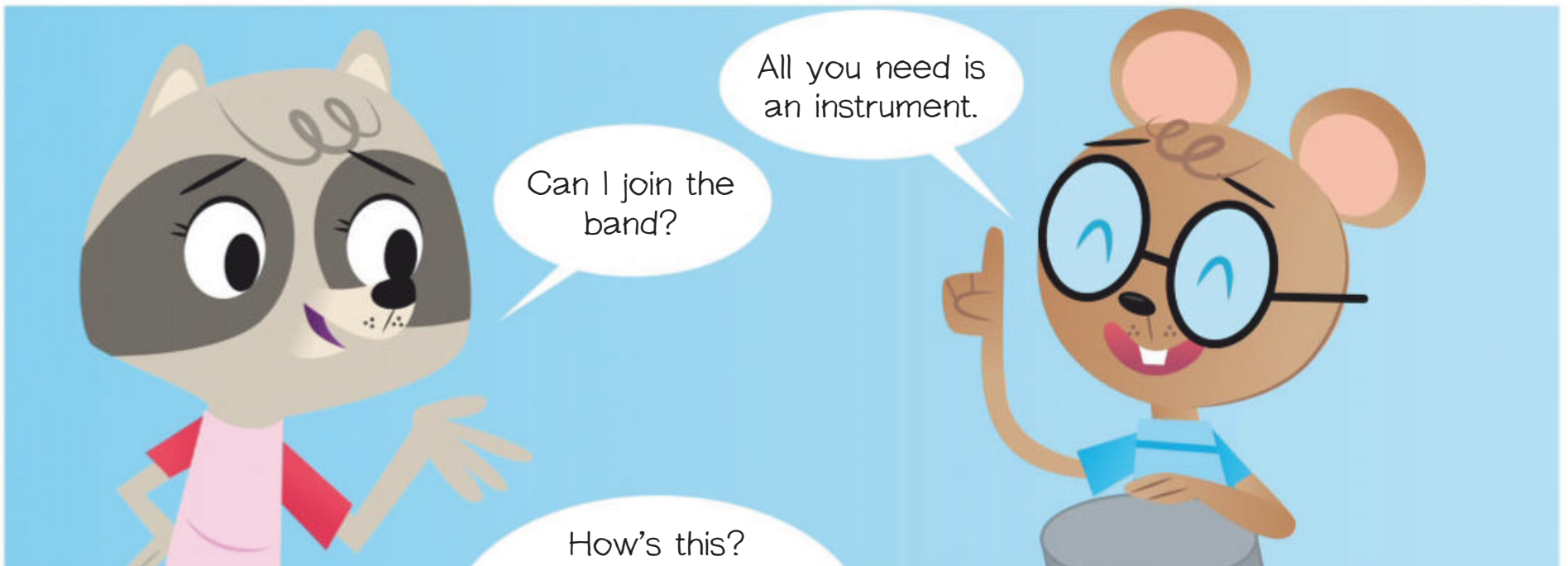
I'm a one-mouse band!

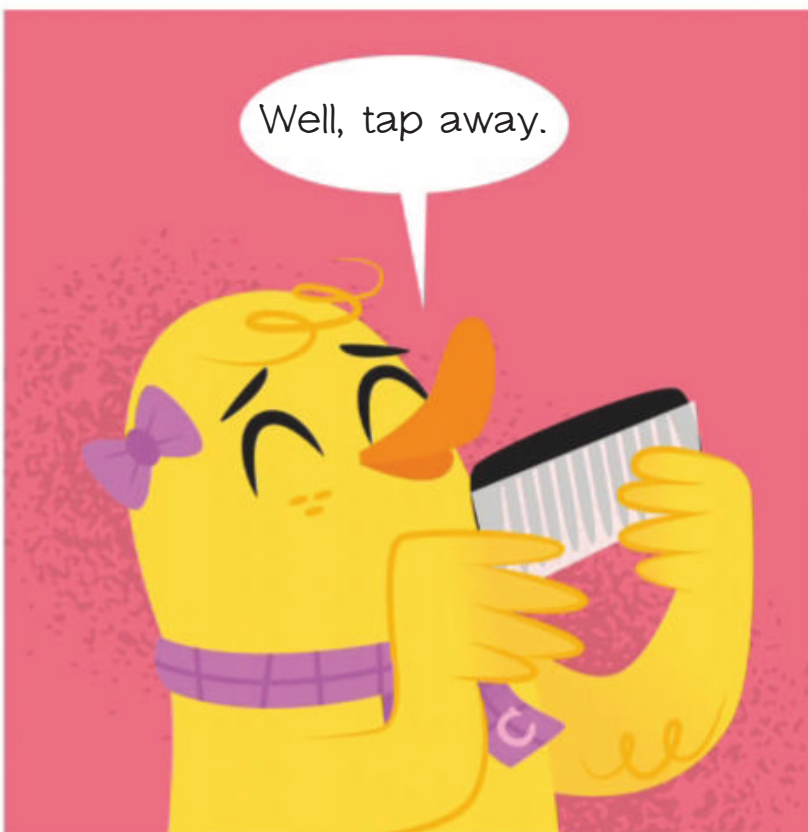
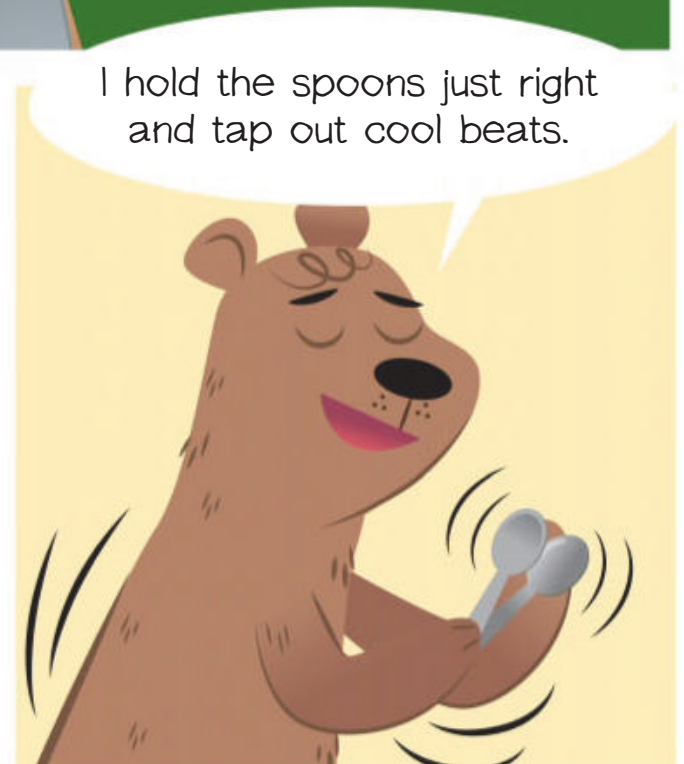


There are too many instruments to count!

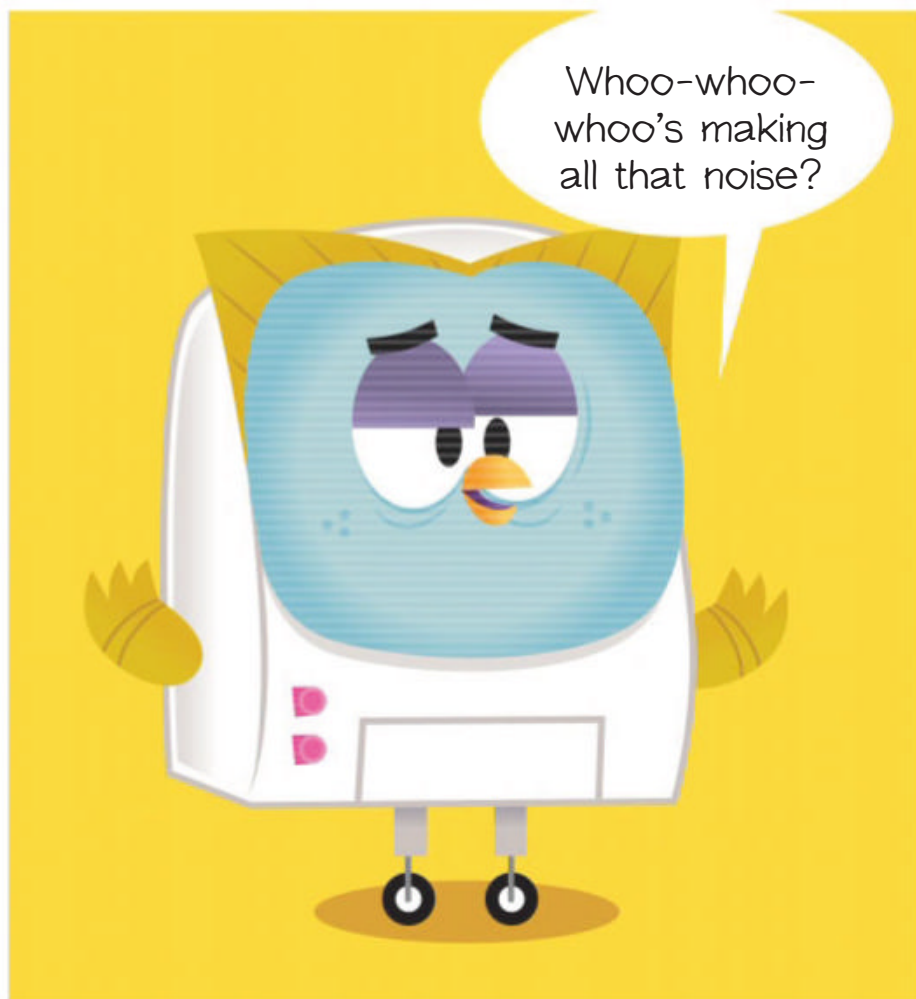












At the Orchestra

art by Paula Becker

There are four families of musical instruments in an orchestra. Here are a few from each group.

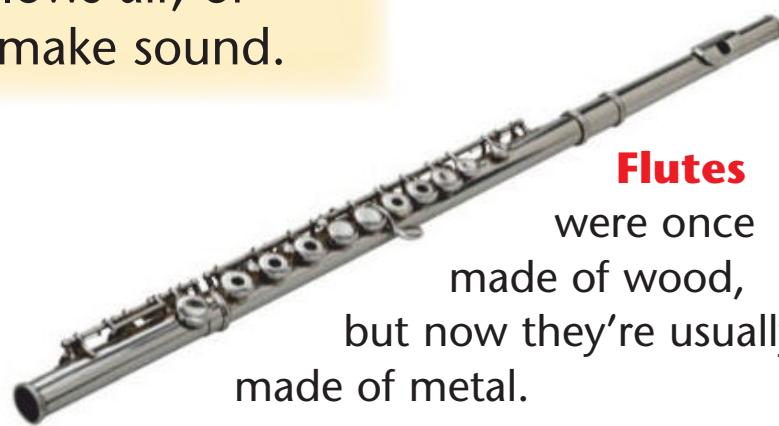
Most **woodwind** instruments are straight hollow tubes. A musician blows air, or wind, through one end to make sound.

A **bassoon** is bent in the middle. If it were straight, it would be taller than a grown man.



Flutes

were once made of wood, but now they're usually made of metal.



Brass instruments usually look like coiled metal tubes. Players buzz their lips into the mouthpiece to make sound.

A **trumpet** has three buttons called valves. A musician presses them to play different notes.



A **trombone** has no valves. Players slide part of the tube in and out to play different notes.



The **tuba** is the largest member of the brass family. Uncoiled, it would be 18 feet, longer than a minivan.



Musicians strike or shake **percussion** instruments. They often play many different instruments during a concert.

Timpani are also called kettledrums. Unlike other orchestra drums, they can be tuned to play different notes.



Tubular bells, also called chimes, sound like church bells when struck. Each metal tube is the same width but a different length.



The main difference between four of the instruments in the **string** section is their size.

A player sits on a high stool or stands to play a big **double bass**.



Cellos are held between a sitting player's knees.



Violas are just a little larger than violins. A player holds either one under the chin.



Do you see the black chin rest on this **violin**? Cellos and double basses don't need one. They stand on endpins.

How many of each of these instruments can you count on the next page?

There are many other instruments in an orchestra, and the number of musicians changes depending on the music they play. What other instruments do you see?





Making a Guitar



It all starts with a tree. With several trees, in fact. Since the first modern guitars were made in northern Spain

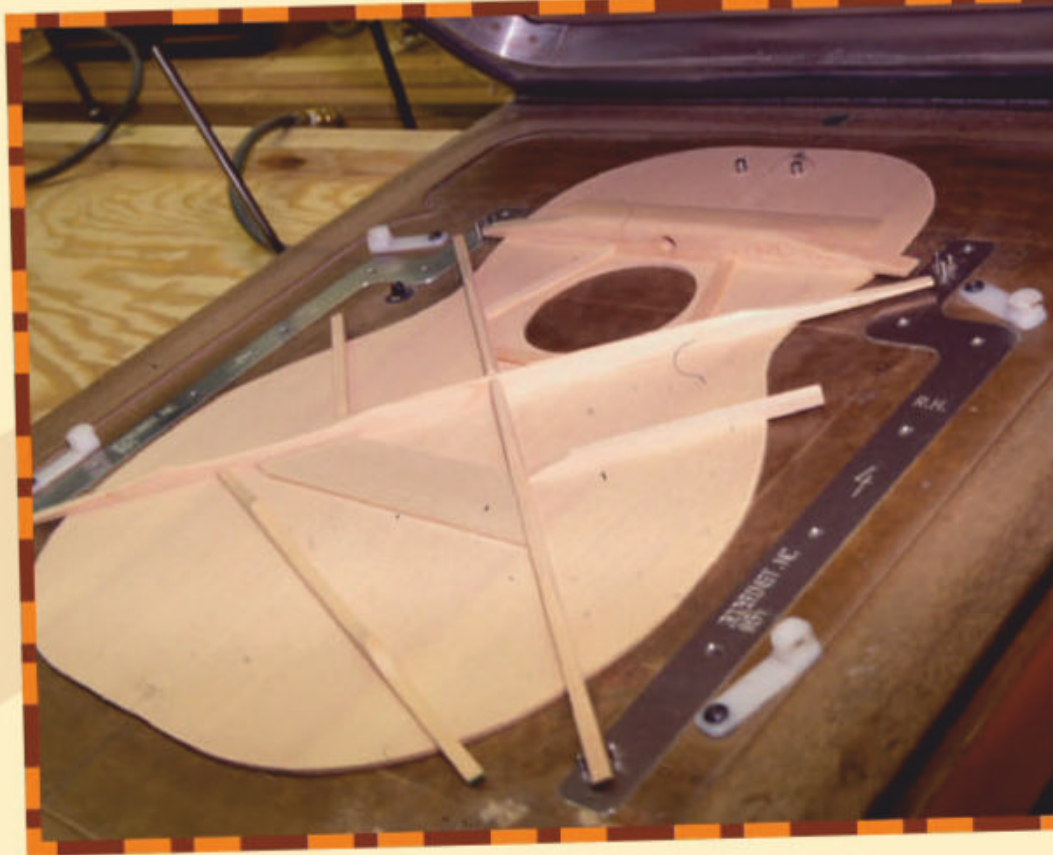
more than 150 years ago, craftspeople have known that a guitar is only as good as the wood from which it is made. Rosewood, mahogany, maple, spruce, ebony, cedar, willow—the names of the wood almost sound like music themselves!

Every guitar is made of several different kinds of wood. Each piece is carefully chosen and then cut to fit the part of the guitar for which it is designed.



The most important part of any guitar is the soundboard—the piece of wood with the large hole that lies underneath the strings. Guitar makers are careful to make the soundboard just the right shape and thickness. Then they glue strips of wood across the inside in a special pattern. This bracing helps strengthen the soundboard. It also improves the tone of the guitar.

Wood for the curvy sides of the guitar must be soaked in water and bent over a hot iron pipe. When all the pieces of the guitar are ready, they are carefully glued together.





Special woodworking tools like this rasp are used to shape and smooth the neck of the guitar. Making a guitar takes a lot of time, patience, and skill.



Craftspeople must make sure the neck is perfectly centered over the soundboard.

Finally it is time to apply varnish or lacquer. This finishing polish brings out the beauty of the wood and protects it from moisture and wear and tear. Varnish also improves the sound of the guitar—but too much makes the guitar sound flat and dull!



Guitar strings are attached and tightened to make just the right musical tones.

**And now—
it's time
for a song!**

All right, guys,
this is a blues riff in
B. Watch me for the
changes, and try and
keep up, OK?



Making Music

art by Patrick Girouard

You can play musical instruments in different ways.

I strum a guitar.

I shake a tambourine.

I blow into a recorder.

I beat a drum.

But the sounds they make—like all sounds—are made by vibrations.

When something vibrates, it moves back and forth very fast. Stretch rubber bands of different widths around an empty box or bowl. Pluck one. Do you see it vibrate?



The vibrating rubber band makes the air around it vibrate too. You can't see the vibrations in the air, but they travel to your ears in the form of sound waves.

If you could see sound waves, they would look a bit like the rings of ripples that a pebble dropped into a pond makes.



The waves spread out in every direction until they run out of energy.

If they reach your ears, you hear a sound.



Pluck the widest rubber band. Now pluck the skinniest one. Can you hear the difference in the sound each makes?

It can be hard to see, but the thin rubber band vibrates faster than the wide one. The faster something vibrates, the closer together its sound waves are and the higher its pitch.

Listen to what happens when I pull the rubber band tighter while I pluck it.



It sounds higher. Tightening the rubber band made it vibrate faster.



If you loosen the rubber band, it will vibrate more slowly and sound lower.



Something needs to vibrate
on every musical instrument.

Tie beads to the rim
of a paper plate or
put some beans in
a covered jar, and
shake!

The beads and the
beans vibrate.



Cover a large mixing
bowl tightly with plastic
wrap. Sprinkle a little
raw rice on top.

When I hold
this pot near the
rice and bang it like
a drum, I make it
vibrate. And look,
the rice hops.

The sound waves you
made when you hit the
pot traveled and made
the plastic wrap and the
rice vibrate too!



When I blow across the top of this empty bottle, I make the column of air inside vibrate.



My bottle has some water in it. When I blow, the sound it makes has a higher pitch.



The air column in the bottle with water is shorter than in the empty bottle. It vibrates faster, so it sounds higher.



Like on my recorder.
When I cover and open holes, I change the length of the air column inside, and that changes the pitch.



See for yourself. Make an instrument and make some music!

Big Music

Musical instruments come in many sizes. You can fit a harmonica in your pocket. A concert grand piano is bigger than a queen-size bed. A few instruments are even too large for a person to play.



The wind plays **The Singing Ringing Tree**. Built of stacked steel pipes, the musical sculpture stands nearly 10 feet tall at the top of a hill in England. Its tune changes depending on which direction and how hard the wind blows.

It's heavy metal music!





The Zadar Sea Organ in Croatia looks like a wide set of white marble steps leading down to the sea. But hidden underneath the steps are 35 pipes connected to plastic tubes under the water. When waves push into the tubes, they push air through the whistle-like pipes to make beautiful music.

The world's largest instrument is—a cave! **The Great Stalacpipe Organ** in Virginia spreads across 3.5 acres, more than two football fields. Despite its size, one person can play it using a keyboard wired to 37 stalactites (the pointy rocks hanging from the cave ceiling). Pressing a key causes a rubber hammer to tap a stalactite, which makes a musical sound.



It's real rock music!



Critter Fiddlers

by Tracy Vonder Brink
art by Shirley Beckes



Birds sing. Dogs howl. But some animals don't use their voices to make music. Instead, they play their bodies like instruments. Rubbing one body part against another to make sound is called stridulation. Animals stridulate to find mates and to communicate with each other.



When I drag my fingernail across a comb, I make noise almost the same way animals stridulate.



Crickets sing with their wings. Underneath a cricket's top wing is a row of bumps, called a file. Its bottom wing has a sharp edge, known as a scraper. When a cricket lifts and shakes its wings, the sharp scraper rubs over the bumpy file and makes a chirping sound.



*Pretend my fingers
are the file and
scraper on my wings.
They don't chirp,
but do you
hear them
tapping?*



Cicadas have a special body part that makes sound. It's called a tymbal, and it's found just behind each wing. The tymbal is a thin layer connected to thicker parts, known as ribs. The ribs click when the cicada bends its tymbals in and out.

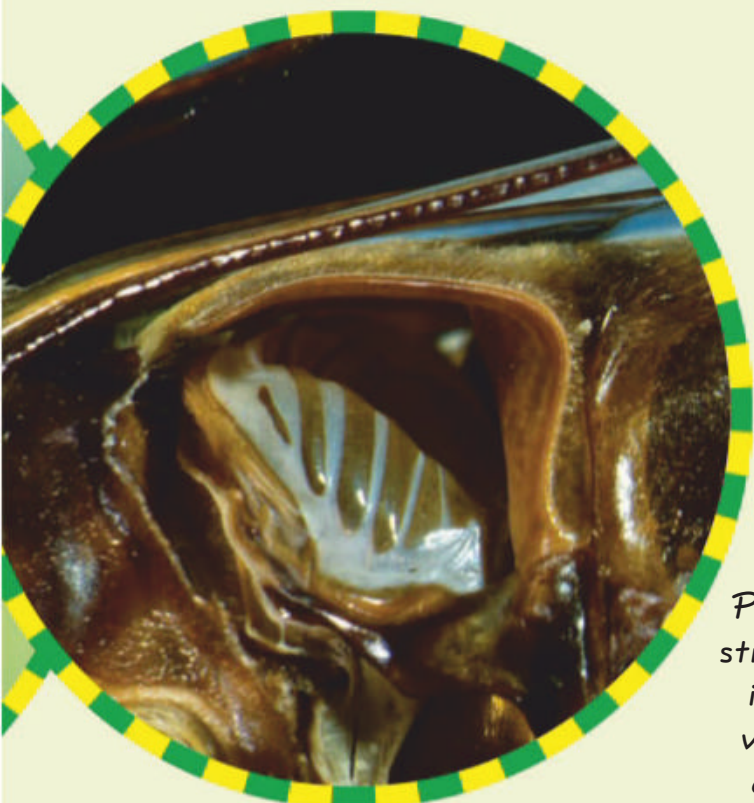




Grasshoppers play their wings with their legs. A grasshopper's back leg has a row of pointy pegs. To make noise, the grasshopper lifts its leg and runs it along the edge of its closed wing. But it only makes sound when the leg moves down over the wing. There's no noise when it moves up.



It's hard to scrape my ankle against my wing without falling over.



Pulling a bendy straw in and out is a little like what a cicada does with its tymbals.

Does the sound change if you pull the straw faster?



Club-winged manakins

knock their wings together very fast. When the wings bang together, a bent feather scrapes over feathers that have thick tips. The bent feather acts like a guitar pick and plays the other feathers. It makes a sound almost like a doorbell.

Club-winged manakins live in cloud forests.



That bird is talented. I can't tap my elbows together.

This is hard to do.



Hana Hashimoto, SIXTH VIOLIN



by Chieri Uegaki, art by Qin Leng

Excerpted from *Hana Hashimoto, Sixth Violin*, published by Kids Can Press.

When Hana Hashimoto announced that she had signed up for the talent show and that she would be playing the violin, her brothers nearly fell out of a tree laughing.

“It’s a *talent* show,” said Kenji. “You’re still a beginner.”

“You can barely play a note,” said Koji. “You’ll be a disaster.”



Hana squared her shoulders and took her violin and bow inside. She pulled at the strings, letting them twang. It was true that she was still a beginner. She had only been to three lessons. The first time she'd held a real violin had been that summer, while visiting her grandfather in Japan.



Long, long ago, Ojiichan had been a violinist for a great symphony orchestra. He still played every morning. From his study, the clear, bright notes would drift upstairs to where Hana slept, and coax her awake as gently as sunshine.

Ojiichan usually played classical pieces by Mozart or Mendelssohn or Bach. But in the indigo evenings, while Hana and her brothers ate ice cream and oranges, Ojiichan would sit on the veranda and play requests.

Hana always asked for a song about a crow cawing for her seven chicks. Whenever Ojiichan played it, Hana would feel a shiver of happy-sadness ripple through her.



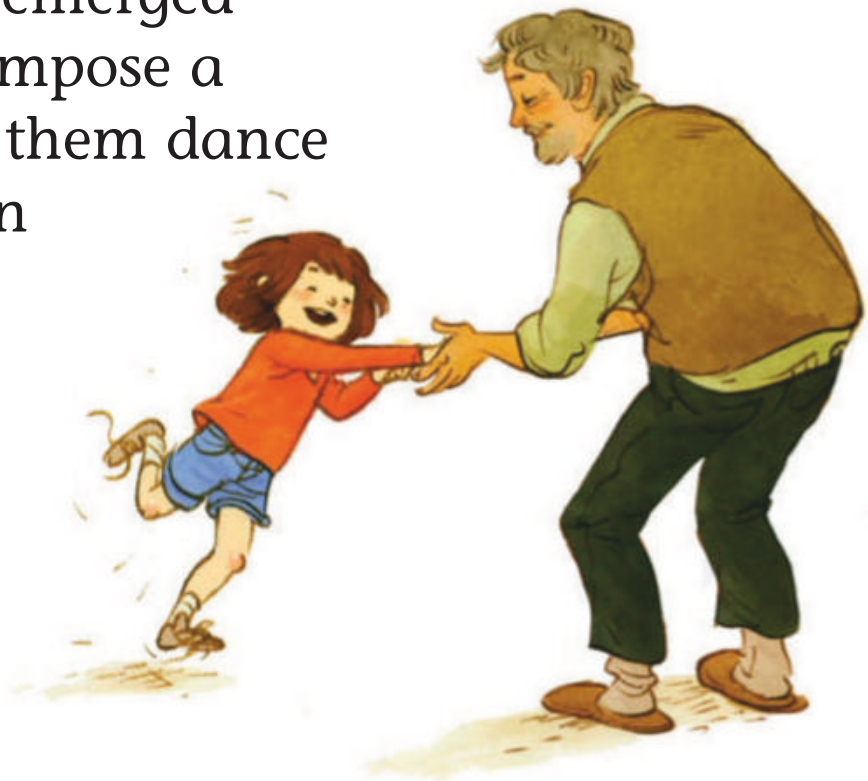
Ojiichan didn't just play songs. He could also make his violin chirp like the crickets Hana tried to find in the tall grasses.



He could pluck the strings to mimic the sound of raindrops on the oil-paper umbrella Hana twirled under during summer storms.

And when the first fireflies emerged at twilight, Ojiichan could compose a melody that seemed to make them dance higher and glow brighter than ever before.

On their last day together, Hana told Ojiichan that she wanted to learn to play the violin. And when Hana got home, her parents agreed that she could.



Now, Hana practiced every day, just like Ojiichan. And every day, her brothers fled the house with covered ears, complaining about the horrible noise.

She practiced in front of her parents, who listened with care while they washed and dried the dishes.

She practiced in front of her dog, Jojo, who cocked his head and sometimes growled at the strange sounds Hana made.



And she practiced on her own, in front of an old photo of Ojiichan from his symphony days.



Finally, the day of the talent show arrived. Backstage, Hana waited with a walloping heart. A dozen acts, including five other violinists, had already gone before her.



As Hana walked onto the stage, her violin tucked under her arm and bow gripped tight in her hand, an oceanic roar filled her ears. She could hardly see with the spotlight in her eyes.



For one dizzy moment, Hana thought, “Kenji and Koji were right. This is going to be a disaster.” She wished she could turn into a grain of rice and disappear into a crack between the floorboards.

Hana held a breath, then ballooned her cheeks before letting it out. With a *whoosh*, the roaring in her ears receded. Then, as everyone seemed to disappear beyond the light shining down on her like a moonbeam, she remembered.

“*Gambarunoyo, Hana-chan.*” Do your best, her grandfather had told her. Ojiichan would be cheering for her.





Hana swallowed her nerves like medicine and leaned toward the microphone. “This is the sound of a mother crow calling her chicks,” she said. She placed the violin under her chin, held her bow in position, and played three raw, squawky notes.

“This is the sound of my neighbor’s cat at night.” She dragged the bow across the strings and the violin yowled in loud protest.

“This is the sound of rain on a paper umbrella.” Hana plucked the strings for a soothing *plomp-plomp-plomp*.



As Hana continued to play all the special sounds she had practiced, the air around her came alive with buzzing bees . . . and lowing cows . . . and squeaking mice . . . and croaking frogs. Finally, as the last sound effect trailed away, Hana took a great big bow.



Later, after dinner, Kenji surprised Hana by asking for an encore. “Make that funny cow sound again,” he said. Then Koji said, “Make that crazy cat sound too.” So Hana did. She happily played all her sounds again.



Perhaps next year Hana would be able to perform one of Ojiichan’s favorite pieces. But for now, Hana played a little melody she had been practicing, remembered from nights lit by dancing fireflies. She imagined that the notes would drift out through the window, past the bright rabbit moon and beyond, and Ojiichan would hear them and smile.

SING-ALONG SONG

by Emily Cambias

Your voice is a musical instrument too. Put your fingers on your throat while you sing this song. Can you feel the vibrations?

To the tune of "Head, Shoulders, Knees and Toes"

***We love to play our made-up song
(made-up song).***

***We sing and sing it all day long
(all day long),***

And even when we march on off to bed

***It still keeps playing in our heads
(in our heads)!***

I could sing
this all day
long.



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Answer to pages 10–11.



Strings Woodwinds Brass Percussion

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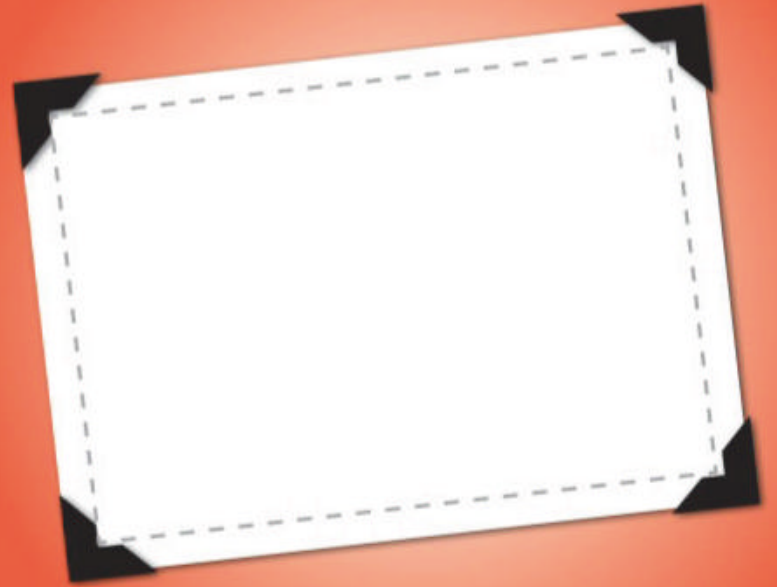


Bonang

One of the main instruments in an Indonesian gamelan orchestra, a bonang consists of small bronze gongs arranged in two rows on a wooden stand. Each gong has a knob on top and looks a bit like a covered pot. To play the bonang, a musician sits on the floor and hits the gongs with padded sticks.



4



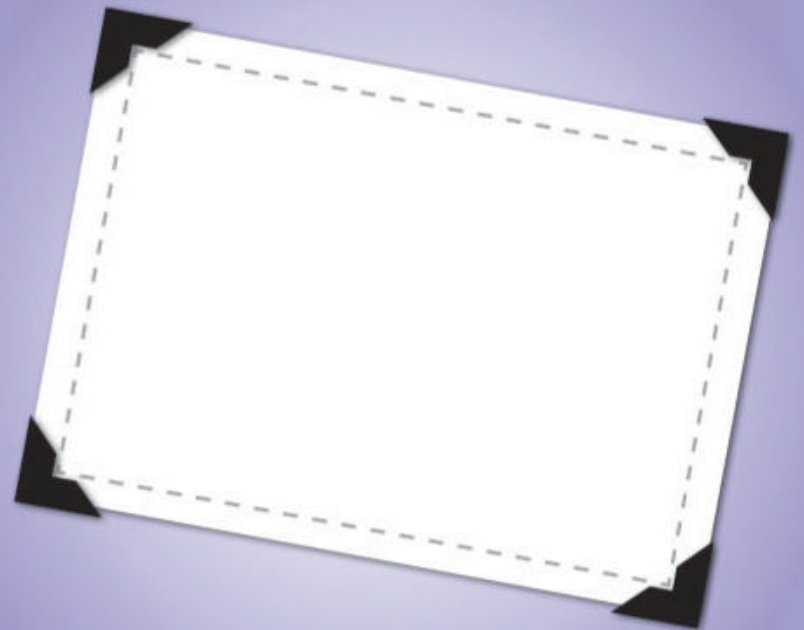
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Didgeridoo

The didgeridoo is a long wooden trumpet from Australia. Modern didgeridoos are sometimes made of metal or plastic, but most are still made the old way, from a hardwood tree that has been hollowed out by wood-eating termites.



6



11

Sitar

The sitar from India looks a little like a guitar with a long, long neck. Its rounded body is made from a large, hard-shelled gourd. Sitarers usually have 18, 19, or 20 strings. Players pluck only 7 of the strings, but when those strings vibrate, they cause other strings to vibrate too.



8



9

Making Music around the World

All over the world, people love making music. But the instruments they play may not be ones you know.

Can you name the seven musical instruments shown in these photos? You'll know them all when you make this book. Just match each instrument with its description. Turn this page over to see how to make the book. What's your favorite instrument?



CLICK TAKEOUT PAGES Please remove carefully at fold. CLICK TAKEOUT PAGES Please remove carefully at fold.

What's the instrument on the front cover of this book? A Japanese taiko drum. Taiko drums come in many sizes, but they are all played with sticks and have two drumheads.



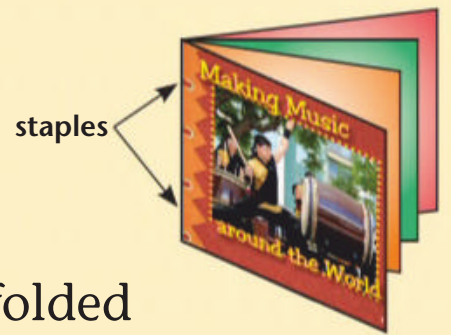
Making Music



around the World

Making the Book

Cut out the four large rectangles along the dashed lines and fold each in half along the solid line. Put the folded pages in order according to their page numbers. Ask a grownup to staple or sew the pages together at the fold.



Bonang

Now cut out the seven instrument photos, and tape or glue each one where it belongs in the book.

Djembe

Didgeridoo

Oud

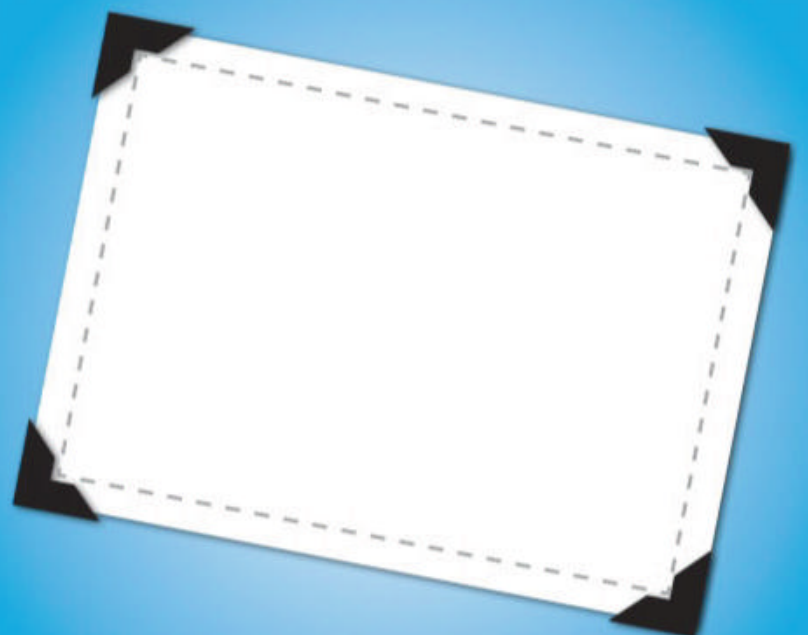
Sitar

Shofar

Erhu

Oud

One of the world's oldest stringed instruments, the oud has been played for thousands of years in the Middle East and North Africa. It has a big, pear-shaped body made of wood and a short, smooth, bent neck. Most ouds have 11 strings.



Djembe

Musicians play the djembe drum with their hands, not drumsticks. They can produce different notes by using different parts of their hands to hit different spots on the drumhead. Djembes are shaped like goblets and were originally carved in West Africa from a single piece of solid wood.



14



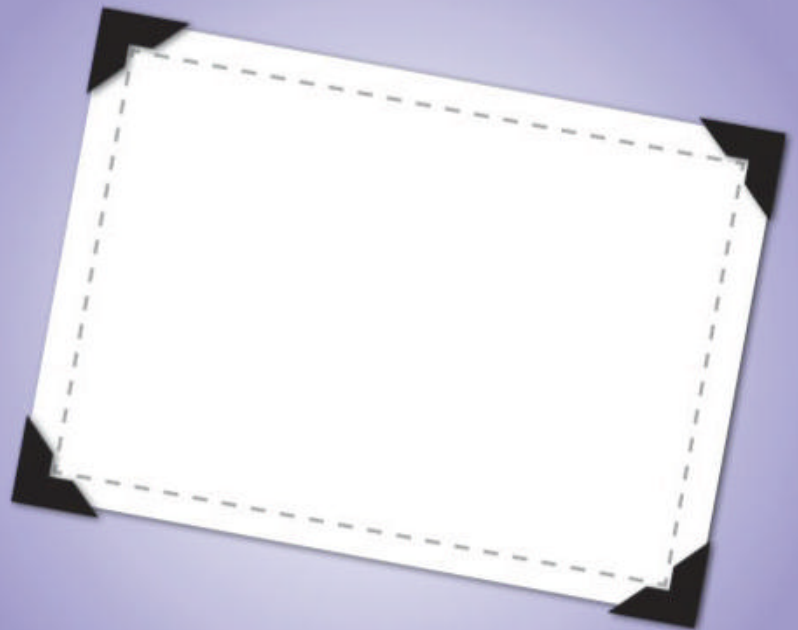
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Erhu

The erhu is sometimes called the Chinese violin. Like the violin, it is played with a bow. But the erhu has only two strings instead of a violin's four. It's held differently too. A violin rests on a player's shoulder with the strings stretching out. An erhu rests on the musician's lap with the strings going up and down.



12



5

Shofar

A shofar is an ancient kind of trumpet made from the horn of an animal, usually a ram. The horn can be straight or curly or curved and any natural color. Large horns sound deeper than short ones. Nowadays, shofars are mostly blown as part of important Jewish holidays.



10



7